

RECEIVED
CENTRAL FAX CENTER
AUG 02 2007

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the above amendments and following remarks. Revisions have been made to claims 128 and 132, and are supported for instance at page 17, line 22 to page 18, line 7, at page 22, line 21 to page 23, line 8, and in Examples 1 and 7 and the results thereof. Claims 134 and 131 are canceled without prejudice or disclaimer. Claims 135 and 136 are added, and are supported, for example at page 14, lines 6-16. Claims 137 and 138 are added, and are supported for example in previously presented claims. No new matter has been added. Claims 101-103, 107, 110-123, and 125-130, 132, 133, 135-138 are pending.

Claims 101-103, 107, 110-123, and 125-134 were rejected under 35 U.S.C. 103(a) as being unpatentable over Toyosawa et al. (US 5,716,997) in view of von Bonin et al. (US 4,992,481). Further, claims 101-103, 107, 110-123, and 125-134 were rejected 35 U.S.C. 103(a) as being unpatentable over von Bonin et al. in view of Toyosawa et al. Applicants respectfully traverse the rejections to the extent they are maintained, and respectfully request that due consideration be given to the following comments.

Regarding claims 128 and 132, these claims are respectively directed to an eraser and an electric-eraser, that require a skeleton structure constituted by a porous structural material of organic polymer consisting essentially of melamine-based resin. However, there is no suggestion or motivation in the references to use a melamine-base resin as required by claims 128 and 132. Toyosawa et al. merely discusses that its copolymer has a main component of ethylene and propylene, and does not show or suggest using melamine-based resin. Regarding von Bonin et al., the reference basically teaches that the skeleton portion is a soft polyurethane foam. Applicants acknowledge that the reference discloses melamine resin foam as one example material, among a host of other organic and/or inorganic foam mouldings, including for example: those based on asbestos, mineral fibers, silicone, phosphazene foams, mixed inorganic/organic foams, cellulose foams, protein foams, natural sponges, phenolic resin foams, urea resin foams, dicyandiamide resin foams or polyimide resin foams, foams based on polymers foamed in dispersion, solution or directly, such as natural or synthetic rubbers, polyolefins, polyacrylates, polyamides, polyethers, polyesters, poly(vinyl halides), poly(vinyl esters) or poly(vinyl ethers). (Col. 4, lines 8-23.) However, von Bonin et al. does not teach or

suggest that the thermosetting resin would be limited to consist essentially of a melamine-based resin. In fact, all of the Examples in von Bonin et al. merely describe the use of reticulated soft urethane foams, and a melamine-based resin is not used in any of the examples. Accordingly, there is no reasonable suggestion that substituting melamine-based is even desired from among the host of materials listed. As von Bonin et al. clearly focuses on soft urethane foams, there is no reasonable suggestion or motivation in the reference that would lead one skilled in the art to choose a melamine-based resin.

Furthermore, Applicants have found that using a melamine-based resin contributes to such advantageous characteristics for an eraser, in that an eraser is easily susceptible to breaking by rubbing. See for example page 22, line 21 to page 23, line 8 and Examples 1 and 7 in Table 1 of Applicants' disclosure. The references cited, however, do not contemplate or recognize such issues. Rather, the references are further removed from claims 128 and 132, because they are directed to different products that are not erasers, and there is no suggestion that such products of the references would be suitable as erasers.

In further support of this position, Applicants as indicated above submit that the skeleton structure, when constituted by a porous structural material consisting essentially of melamine-based resin, would exhibit characteristics peculiar to melamine-based resin in that the skeleton structure is easily crumbled with little abrasion. Applicants have demonstrated that such a characteristic is well suited for an eraser. However, if for example a polyurethane foaming material, as mainly used in von Bonin et al., is substituted by melamine-based resin foaming material, a fire retardant agent that is easily crumbled would appear to result. In fact, von Bonin et al. aims to avoid such a resulting fire retardant that is easily crumbled and brittle. Rather, von Bonin et al. attempts to achieve a fire retardant agent that is not brittle or crumbly and not susceptible to cracking. See Col. 2, line 46-59. Thus, von Bonin et al. provides no reasonable suggestion of using melamine-based resin for an eraser material, as such a resin tends to be brittle and thus suitable for an eraser, while not so useful or desirable for flame retardant materials. For at least the foregoing, Applicants respectfully submit that claims 128 and 132 and their dependents are allowable.

With regard to claim 102, this claim requires that a filling rate of the eraser base material is set in the range from 60% to 80% with respect to the entire volume of the void portion in the porous structural material. The rejections contend that while Toyosawa et al. and von Bonin et al. do not specifically disclose the filling rate of the functional material with respect to the entire volume of the void portion of the three-dimensional continuous network, the claimed filling rate would be inherently present. The Office Action states that Toyosawa et al. discloses a weight ratio of copolymer and functional material is up to 30%, and which is within the range disclosed in the Applicants' specification. (Col. 6, lines 30-32 of Toyosawa and page 25 of Applicants' specification. The Office Action further alleges that, because the filling technique of Toyosawa et al. is the same as that of Applicants, the filling rate of the functional material would be inherently present, so as to obtain its polymeric reticulated structure, which is structurally the same as the claimed invention. Applicants respectfully disagree with the interpretation in the rejections that the filling rate feature is satisfied by the art cited.

To the contrary, the claimed filling rate is relative to the volume of the void portion in the porous structural material. That is, the void portion has no weight, as it is a space having nothing inside before filling. However, the weight ratio relied upon in the rejection is not relevant to the claimed filling rate. Rather, the weight ratio of Toyosawa et al. pertains to a weight ratio of the binder with respect to the filling agent. Therefore, application of the weight ratio is misapplied, and there is no reasonable basis to assume that such weight ratio would satisfy the filling rate required by claim 102.

The rejection further states that von Bonin et al. discloses that a binder is present from 3 to 30% by weight, and which is within the range disclosed by Applicants. However, von Bonin simply discusses a content of binder material with respect to the weight of the filling agent. For at least similar reasons discussed with respect to Toyosawa et al., the weight ratio relied upon in von Bonin et al. is not relevant to the claimed filling rate.

Moreover, the feature of claim 102 can provide an eraser with improved structure and performance. For example, the wear rate and the rate of erasure can be improved as a result of the filling rate recited by the claims. (See for example page 14-15 of Applicants' disclosure.) An eraser is provided that can erase more smoothly and can

leave scraps on paper or the surface of the eraser and collected in more continuous form, rather than being scattered all over, or adhering to the eraser. (See for example Table 1 and pages 38-39 of Applicants' disclosure.) However, the references cited neither disclose nor suggest claim 102, nor enjoy the benefits arising therefrom. Applicants respectfully submit that claim 102 is not obvious.

For at least the foregoing reasons, Applicants respectfully request that claims be favorably considered and allowed, and respectfully submit that the rejection be withdrawn.

Regarding added claim 135, the eraser further requires that the porous structural material of the skeleton portion is susceptible to breaking when rubbed. Applicants respectfully submit that claim 135 is allowable, because the references of record do not disclose or suggest such a feature. Applicants' claim 135 requires an entirely different structure than what the references of record disclose, namely that the porous material of the skeleton portion is susceptible to breaking. See for example page 14, line 10-13, and page For example, von Bonin et al. clearly describes that foam mouldings of flame retardant elements according to the invention do not have a brittle and crumbly character. See col. 2, lines 49-52 of von Bonin et al.

Furthermore, Applicants respectfully submit that the references are further not relevant to claim 135, because the references are not directed to an eraser. In fact, Toyosawa et al. is directed to polymeric reticulated structures and von Bonin et al. is directed to flame retardants. There is no reasonable suggestion that the references would arrive at or recognize such a structure suitable for an eraser. For at least these reasons, Applicants respectfully submit that any combination of von Bonin et al. and Toyosawa et al. is unreasonable and further removed from claim 135.

Regarding added claim 136, the eraser further requires that the skeleton structure has a void rate of not less than 90%. Applicants respectfully submit that claim 136 is allowable, because the references of record neither disclose nor suggest anything relevant to such a feature.

Regarding added claims 137 and 138, these claims respectively depend upon claims 128 and 132 and are allowable for at least the reasons specified above. Moreover, claims 137 and 128 further limit the skeleton structure to be constituted by a porous

material consisting of melamine-based resin. Accordingly, the references of record do not teach or suggest these claims, and Applicants respectfully submit that they are separately allowable.

In view of the above amendments and remarks, Applicants believe that the pending claims are in a condition for allowance. Favorable consideration in the form of a Notice of Allowance is respectfully solicited. If any questions arise regarding this communication, the Examiner is invited to contact Applicants' representative listed below.



Dated: August 2, 2007

Respectfully submitted,

HAMRE, SCHUMANN, MUELLER &
LARSON, P.C.
P.O. Box 2902
Minneapolis, MN 55402-0902
(612) 455-3800

By: 

Curtis B. Hamre

Reg. No. 29,165

for

Douglas P. Mueller

Reg. No. 30,300

DPM/CBH/baw